

***Abstract***

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A decision regulation method separates noise from consistent application domain characteristics and integrates multiple types of information to create robust decisions that work well for the application in spite of the application dynamics and/or errors in training data. Adjustment is made between a local and global decision basis to yield a balance

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point to match the application. Unequal class prevalence of the training data is compensated. The decision tree generation process is also regulated using information integration. Reliability measures and new pruning methods are taught for optimization of hierarchical decision structures.